



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/667,203

09/18/2003

Foster D. Hinshaw

3336.1008-001

7168

21005

7590

07/08/2009

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

530 VIRGINIA ROAD

P.O. BOX 9133

CONCORD, MA 01742-9133

EXAMINER

LOVEL, KIMBERLY M

ART UNIT

PAPER NUMBER

2167

MAIL DATE

DELIVERY MODE

07/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/667,203	Applicant(s) HINSHAW ET AL.	
	Examiner KIMBERLY LOVEL	Art Unit 2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/10/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. This communication is in response to the Amendment filed 10 April 2009.
2. Claims 1-14 are currently pending. In the Amendment filed 10 April 2009, claims 1, 8 and 9 are currently amended. This action is made Final.
3. The previous prior art rejections have been maintained.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on 10 April 2009 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

5. The objections to claims 8, 9 and 11 are withdrawn as necessitated by Amendment.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No 6,434,649 to Baker et al (hereafter Baker) in view of US PGPub 2003/0126056 to Hausman et al (hereafter Hausman) in view of US Patent No 5,983,270 to Abraham et al (hereafter Abraham).

Referring to claim 1, Baker discloses a Programmable Streaming Data Processor (PSDP) arranged to perform primitive initial processing functions directly on a set of data (see abstract; column 1, lines 48-58; and Fig 1A, item 100 – the multimedia processor is considered to represent the programmable streaming data processor since it comprises of the same components and is a data processor for streaming which can be programmed), comprising:

- a streaming data interface, arranged to receive non-field delineated data from a streaming data source (see column 5, lines 59-68 and Fig 1, items 122 and 132);

- a streaming interface First In First Out (FIFO) [first-in-first-out buffer], arranged to temporarily store the streaming non-field delineated data from the streaming data interface (see column 17, lines 25-45; column 18, lines 13-22; and Fig 7, item 716 – the interface uses a first-in-first-out buffer; according to the 5th Edition of Microsoft's Computer Dictionary, the definition of a buffer states "a region of memory reserved for use as an intermediate repository in which data is temporarily held while waiting to be transferred between two locations or devices"); and

- an output First In First Out (FIFO) device, for forming tuples [outgoing data] and temporarily storing them prior to conditionally forwarding them to the Job Processing Unit (see column 18, lines 18-22 and column 30, lines 22-32).

Baker discloses a Programmable Streaming Data Processor (PSDP) which is arranged to perform primitive functions directly on data received from a streaming data interface, however, Baker et al fails to explicitly teach the further limitations of the data engine and the tuple generator.

Hausman discloses a streaming data interface arranged to receive data from a streaming data source [application(s) 122 and database(s) 121] (see [0039], lines 10-15; [0043], lines 15-16), a streaming interface arranged to temporarily store streaming data from the streaming data interface [queue 108] (see [0043], lines 15-16) and the further limitations of a data engine, arranged to receive the non-field delineated output data from the streaming interface, recognize the record and field structure of the non-field delineated data, determine field boundaries in the non-field delineated data, and process fields to select one or more fields to be assembled into output tuples, the data engine also containing logic arranged to determine whether an output tuple is to be selected for further processing by additional processing Job Processing Units (JPUs) and to assert a use or lose decision value according to that determination [re-ordering, deleting, editing and/or adding elements] (see [0045]; [0048]; and [0057]); and an output device arranged to temporarily store tuples [data] prior to conditionally forwarding them to the JPU [cache records until users are ready to use them] (see [0071]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to Hausman's method of filtering data as a subcomponent to Baker et al's Data Streamer. One would have been motivated to do so since it is well known to one of ordinary skill that filtering provides customized distribution of data and also decreases that the amount of information sent across the network (Hausman: see [0005]).

While the combination of Baker and Hausman (hereafter Baker/Hausman) discloses a tuple generator, arranged to assemble fields into the output tuple (see

Art Unit: 2167

[0065]), Baker/Hausman fails to explicitly disclose the further limitation wherein if the use or lose decision value indicates that such the output tuple is to be discarded, to prevent the output tuple from being transferred for further processing by the JPU.

Abraham discloses the filtering of data packets, including the further limitation wherein if the use or lose decision value indicates that such the output tuple is to be discarded, to prevent the output tuple from being transferred for further processing by the JPU [allow/deny] (see column 46, line 54 – column 47, line 30).

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the concept of filtering the output tuples of Baker/Hausman in the manner disclosed by Abraham. One would have been motivated to do so in order to increase efficiency by limiting the amount of information transferred.

Referring to claim 2, the combination of Baker/Hausman and Abraham (hereafter Baker/Hausman/Abraham) discloses an apparatus as in claim 1 wherein the use or lose value indicates a result from logic processing of fields read from the streaming data interface (Baker: see column 17, line 52 – column 18, line 12; Abraham: see column 46, line 54 – column 47, line 30).

Referring to claim 3, Baker/Hausman/Abraham discloses an apparatus as in claim 1 wherein the use or lose decision value indicates a result from Transaction Identifier (TID) processing (Hausman: see [0063] and [0064]).

Referring to claim 4, Baker/Hausman/Abraham discloses an apparatus as in claim 3 wherein the TID processing and data engine logic execute in parallel (Hausman: see [0063] and [0064]).

Referring to claim 5, Baker/Hausman/Abraham discloses an apparatus as in claim 1 wherein the output tuple is greater in length than an expected predetermined size, and the use or lose decision value is then used to set an overflow field in the output tuple (Baker et al: see column 18, lines 56-64).

Referring to claim 6, Baker/Hausman/Abraham discloses an apparatus as in claim 5 wherein the use or lose decision value is not asserted when a buffer local to the programmable data streaming processor is full; and means for appending an overflow filter bit to a tuple that indicates a transfer of a tuple that should be ignored (Baker: see column 18, lines 56-64).

Referring to claim 7, Baker/Hausman/Abraham discloses an apparatus as in claim 1 additionally comprising: a Direct Memory Access (DMA) interface, coupled to the output FIFO, to provide direct access to a memory in the Job Processing Unit (Baker: see column 6, lines 24-25 and column 19, lines 15-25).

Referring to claim 8, Baker/Hausman/Abraham discloses an apparatus as in claim 1 wherein the use or lose value is used to reset an output FIFO write pointer so any prior fields in the output tuple are discarded (Baker: see column 12, lines 18-34 – after the data is written, it is considered to be removed from the temporary storage of the buffer, therefore being deleted).

Referring to claim 9, Baker/Hausman/Abraham discloses an apparatus as in claim 1 wherein the overflow filter bit is inserted in a length field appended to the output tuple (Baker: see column 34, lines 56-62).

Referring to claim 10, Baker/Hausman/Abraham discloses an apparatus as in claim 1 wherein an invalid field is appended to a tuple to indicate the results of transaction ID processing (Baker: see column 12, line 62 – column 13, line 16).

Referring to claim 11, Baker/Hausman/Abraham discloses an apparatus as in claim 10 wherein the results of TID processing indicate that a tuple is to be returned (Baker: see column 12, line 62 – column 13, line 16).

Referring to claim 12, Baker/Hausman/Abraham discloses an apparatus as in claim 10 wherein the invalid field indicates that the tuple should not have been returned but the output FIFO overflowed (Baker: see column 31, lines 10-22 and column 34, lines 56-62).

Referring to claim 13, Baker/Hausman/Abraham discloses an apparatus as in claim 1 further comprising: a register reflecting the final PSDP status which is read by the CPU to identify whether any overflow or TID status bits are set in any of the tuples (Baker: see column 29, line 63 – column 30, line 21).

Referring to claim 14, Baker/Hausman/Abraham discloses an apparatus as in claim 1 wherein the use or lose decision value represents DeMorgan's Law reduction of multiple instructions (Baker: see column 5, lines 25-34).

Response to Arguments

8. Applicant's arguments filed in regards to the prior art rejections have been fully considered but they are not persuasive.

9. Referring to Applicant's argument on pages 6-7 of the the Remarks, the Applicant states "The combination of Baker, Hausman and Abraham is not configured to recognize the record and field structure of non-field delineated data ... Further, there is certainly no teaching in Hausman, or any other cited reference, of a data engine arranged to 'recognize the record and field structure of the non-field delineated data'."

The examiner respectfully disagrees. It is noted that paragraph [0039] of Hausman states "Data is preferably received live from system applications 122 by queue 123; delimiters are inserted, if necessary, between records and optionally between individual elements within records." Thus, in order for the delimiters to be inserted, the record and structure of the stream has to be recognized.

10. Referring to Applicant's argument on pages 7-9 of the the Remarks, the Applicant states "The combination of Baker, Hausman and Abraham neither selects fields to be assembled into output tuples nor assembles fields into tuples ... As emphasized above, an output tuple 'is comprised of the fields ... that are to be selected for further processing by the CPU and PSDP generated fields' (paragraph [0019] of Applicants' published application)."

The examiner respectfully disagrees that Hausman fails to teach this concept. Paragraph [0019] of Applicant's Apecification states "The collection of fields selected for return to the CPU as a result of processing a record is referred to a tuple." Paragraph

Art Unit: 2167

[0048] of Hausman states "... API 104 formats (or re-formats, i.e., maps, records into any form(s) requested by the individual user(s), as for example by re-ordering, deleting, editing, and/or adding elements within the information strings carried by records." Also, according to [0045], only the records that are requested by the users are sent to that particular user [JPU] for processing. According to [0057], selected data records are mapped and distributed via mapped data streams. Therefore, the reformatting of the records assembles the received data into a records with elements that meet the requirement of the user [process fields to select one or more fields to be assembled into output tuples]. These records are then sent via mapped data streams wherein each user receives only requested records. The concepts of deleting elements from records and not sending particular records to particular users is considered to represent the concept of the use or lose decision. The records are considered to represent the tuples since both a tuple and a record equate to a row of data. The record in this instance includes a plurality of elements. Paragraph [0065] of Hausman states "Optionally too records identified for specific user are filtered according to criteria established by users. For example, a given user may wish to see only stock offerings related to IBM issues; all other records of type 'stock offering' would be filtered out of that user's data stream." The concept of filtering is considered to be analogous to the concept of a use or lose decision. Therefore, Hausman is considered to meet the requirements of the claimed output tuple as set forth in the specification.

Art Unit: 2167

11. In regards to Applicant's arguments on pages 9-10 of the Remarks that it would not be obvious to combine Baker, Hausman and Abraham, the examiner respectfully disagrees.

The motivation provided is that Hausman provides the feature of be able to filter data. It is well known to one of ordinary skill in the art that filtering data decreases the amount of data. Even when sending data between two endpoints, decreasing the amount of data to be sent increases the efficiency of sending the data.

12. The rejections of dependent claims 2-14 are maintained for the reasons stated above in regards to claim 1.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent No 6,411,974 to Graham et al – Graham discloses a parse stream process that parses a stream using parse rules to identify desired fields (see column 6, line 66 – column 7, line 10).

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2167

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIMBERLY LOVEL whose telephone number is (571)272-2750. The examiner can normally be reached on 8:00 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cottingham can be reached on (571) 272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John R. Cottingham/
Supervisory Patent Examiner, Art Unit 2167

/Kimberly Lovel/
Examiner
Art Unit 2167

5 July 2009
/KL/

Application/Control Number: 10/667,203
Art Unit: 2167

Page 14